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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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01/18/2001

Takatoshi Tsujimura

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11/15/2005

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EXAMINER

NGUYEN, DUNG T

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/764,621

Applicant(s)

TSUJIMURA ET AL.

Examiner

Dung Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 9, 10, 12, 14-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 13 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicants' amendment dated 09/02/2005 has been received and entered. By the amendment, claims 1-2, 5-7, 9-18 and newly added claims 19-20 are now pending in the application.

#### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first polarization layer formed on the display electrode which formed on the polymer layer and penetrating the polymer layer (claims 13 and 19) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al., US Patent No. 6,417,899, in view of Ichihashi, US Patent No. 6,686,980.

Regarding claim 1, Jones et al. disclose a liquid crystal display (LCD) device (figure 2) comprising:

- . an array substrate (3) having a driving element (thin film transistors, TFTs), a display electrode (7);

- . a first polarization layer (53);

- . a liquid crystal layer (11);

- . a color filter substrate (29) having a color filter (23/25/27), a common electrode (15),

wherein the first polarization layer is set between the array substrate and the color filter substrate;

- . a second polarization layer (31);

- . a backlight unit (51), wherein light reflected from the array substrate inherently returns to the backlight unit without passing through other layers., so that the brightness of the liquid crystal display is improved compared to the case of an LCD having light reflected from the array substrate returns to the backlight unit passing through a polarization layer.

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Jones et al., however, do not disclose the first polarization layer over the display electrode. Ichihashi does disclose a polarizing film (16) can be formed over a display electrode (ITO film 12). Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to employ a polarization layer over a display electrode as shown by Ichihashi in order to obtain an LCD device having excellent visual angle characteristic (col. 3, line 15).

Regarding claims 2, the modification to Jones et al. disclose the claimed invention as described above except for the common electrode formed on the array substrate. It would have been obvious to one skilled in the art at the time of the invention was made to employ the common electrode and the pixel electrode formed on the array substrate (i.e., in-plane switching type LCD), since it is a common practice in the art to improve viewing angle in an LCD device.

4. Claims 4-6, 11-12, 14-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al., US Patent No. 6,417,899, in view of Ichihashi, US Patent No. 6,686,980, further in view of Applicants admitted prior art (APA), figures 11-12.

Regarding the above claims, the modification to Jones et al. discloses the claimed invention as described above; the modification to Jones et al. does not explicitly disclose a switching element (reflecting gate/source/drain electrode). APA does disclose an array substrate comprising a switching element as claimed (see figures 11-12). Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to form a switching element (i.e., thin film transistor, TFT) for driving a display device. In addition, since the switching element formed underneath the polarization layer (as modified by Ichihashi), all light reflected would return back to backlight without passing any layers.

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Regarding claims 11-12, although Jones et al. do not disclose a polymer layer having a polarization elements as a polarization layer, Ichihashi does disclose a polymerizable dichroic dyes can be used for forming an anisotropic film having a polarizing property (i.e., polarization layer). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the Jones et al. first polarization layer (53) by a polymer layer and having a polarization property as shown by Ichihashi in order to improve a display characteristic (e.g., visual angle characteristic) (col. 3, line 15). It should be noted that part of the display electrode would inherently connecting to the TFT for driving purposes.

5. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al., US Patent No. 6,417,899, in view of Applicant's submitted prior art, Yoshihiro, JP 9-331066.

Regarding the above claims, Jones et al. disclose the claimed invention as described above except for a reflection film. Yoshihiro does disclose a reflection film (28, 30) being formed in an area (e.g., gap) between the display electrode and the wiring (of the TFT) over the array substrate (figure 1) corresponding to an area in the liquid crystal layer in which a liquid crystal material is orient in a not-purposed direction (i.e., a direction different from an original orientation direction, outside display region) when applying a voltage to the liquid crystal layer. Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to form a reflection film in the Jones et al. device as shown by Yoshihiro in order to improve a display contrast in an LCD device (see abstract).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al., US Patent No. 6,417,899, in view of Applicant's submitted prior art, Yoshihiro, JP 9-331066, further in view of Ichihashi, US Patent No. 6,686,980.

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Regarding claim 9, the modification to Jones et al. discloses the claimed invention as described above except for the polarization layer formed between the array substrate and the color substrate. Ichihashi does disclose a polarizing film (16) can be formed over a display electrode (ITO film 12). Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to employ a polarization layer over a display electrode as shown by Ichihashi in order to obtain an LCD device having excellent visual angle characteristic (col. 3, line 15).

***Allowable Subject Matter***

7. Claim 11 is allowed.
8. Claims 13 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The references of record neither disclose nor make obvious an LCD device comprising a combination of various elements as claimed, more specifically of a polymer layer covers the insulating substrate and in which polarization elements are dispersed and a display electrode which is formed on the polymer layer and penetrates the polymer layer and a part of which conductively connects with the thin film transistor as set forth in claims 11, 13 and 19.

***Response to Arguments***

10. Applicant's arguments filed 09/02/2005 have been fully considered but they are not persuasive.

Applicants' arguments:

- a. there are elements of claims 1 and 2 (and 5) which are not disclosed or suggested by Jones and Ichihashi since the alleged combination of Jones and Ichihashi would not improve overall transmittance, according to the claimed invention (amendment, page 14). In addition, it would not have been obvious to modify the three polarizer system in view of the two polarizer system of Ichihashi, to arrive at the claimed invention (amendment, page 17).
- b. Regarding claims 7 and 10, Yoshihiro does not teach or suggest that the planarization layer 38 serves as a polarizing layer (amendment, page 20).

The Examiner responses:

- a. The Examiner agrees that Jones teaches a three polarizer system and the transmittance of polarizer might not be exceed 50%; however, there is no definition provided how much is good or bad transmittance. In addition, the modification to Jones would improve a visual angle characteristic (see Ichihashi, col. 3, ln. 15) not about contrast characteristic. Finally, the combination of Jones and Ichihashi would rearrange the polarizing plate, it would not modify two polarizer system into the three polarizer system as asserted by Applicant.

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- b. The modification to Jones in view of Yoshihiro would employ a reflection film (28, 30) in an area between the display electrode and the wiring (i.e., gap area therebetween). Such modification would not remove all elements from the Jones's device; therefore, the combination of Jones and Yoshihiro would result such polarizing layer combined with the reflection film as claimed invention.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

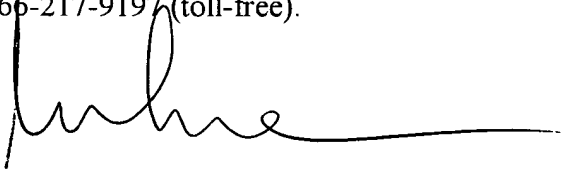
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Tuesday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN  
11/12/2005



**Dung Nguyen**  
**Primary Examiner**  
**Art Unit 2871**